

SteriTransfer System

ABOUT ME:

In 2005, my younger brother was killed in a head-on collision with a semi truck. After investigating the situation, I found that the ambulance took 27 minutes longer than it would have taken anyone driving the speed limit to go the same distance. This happened in the small town of Watertown, Wisconsin. An ineffective system is what sparked my desire to get into medicine and graduate college with a dual degree in Pre-medicine / Molecular Biology and Integrative Physiology.

The next six years I spent as an EMT/Paramedic in emergency departments in Colorado varying from trauma level one to three. In addition, I spent time working with stem cell research for an osteobiologics company that focused on bone growth for spinal fusions in operating rooms across Colorado, Wyoming, Texas, and California to name a few. During my time in the Emergency Room and Operating Room, I witnessed and was victim to needle stick injuries caused by human error. The inefficiencies of how fluids and medications are transferred, the volume of wasted fluids and medications, and the human error and negligence is costing the medical industry billions each year. Not only does it impact people and companies financially, but it costs patients and those affected from needle stick injuries their physical and psychological well being.

PROBLEM:

Needle Stick Injuries (NSIs) and Hospital Acquired Infections (HAIs) are far too common. According to the World Health Organization (WHO), 35,000,000 health care workers (HCW) are at risk of NSIs annually. Each year, 650,000-800,000 HCWs in the US and 3,500,000 worldwide experience a NSI. The WHO estimates approximately 60% of NSIs are never reported. In addition, the WHO estimates that 1,300,000 people worldwide die due to preventable NSIs. Meanwhile, HAIs due to contamination of a sterile field costs the medical industry up to \$45,000,000,000 each year due to treatment.



Leading industry groups and government agencies have stated a preference for the use of equipment with passive, integrated safety features. Some of those agencies, regulatory groups/regulations are The Affordable Care Act, NIOSH, OSHA, CDC, WHO, NaSH, FDA, etc.

Safety has been an ongoing issue in hospitals, and they are still seeking devices that will protect the medical staff as well as the patients. In addition to protecting the medical staff from contamination/NSIs, the SteriTransfer System is also used to create a more efficient workflow.

Statistics on Needle Stick Injuries (NSI):

- As a conservative estimate, there are 650,000-800,000 NSIs/year in the US. Of these, 72% of which occur in an Operating Room and an estimated 60% are unreported.
- The cost of treatment is on average \$4,000 - \$5,000, and those infected with a bloodborne pathogen (for example, HIV) can exceed millions in medical treatment excluding legal fees that may be assessed to the hospital.
- This costs the industry nearly \$14 billion/year unnecessarily.

- The total cost to the medical industry is nearly \$100,000,000,000/year including indirect costs (for example, lost work productivity).

Medical staff has a higher probability for contaminating sterile fields (current process shown in picture) and getting NSIs, with the potential of contracting bloodborne pathogens using the ad hoc systems. These systems are highly inadequate and are associated with higher contamination factors, especially in the ER and OR.

SOLUTION: THE STERITRANSFER SYSTEM - *PATENTED as of February 4, 2020 - Patent No. 10,549,026*

TS Medical's mission is to provide standards-based medical safety solutions to improve safety for medical professionals, protect patient's wellbeing, improve overall efficiency, decreased provider costs

The SteriTransfer System was created to be the "third hand" for the surgical technician. This device creates a standardized procedure of fluid transfer (medicine, blood, stem cells, etc.) from a non-sterile to a sterile environment, creating a repeatable process. The SteriTransfer system is practical, efficient, and minimizes human error. The device attaches to the medical table to provide stability and the opening of the syringe faces away from the sterile field. This allows the nurse the ability to transfer fluid (medicine, blood, stem cells, etc.) by connecting through the butterfly tip eliminating the need for the surgical technician to thread a hypodermic needle through an opening of a medical vial (photo above). This prevents potential contamination, NSIs, unnecessary fluid waste, and allows the surgical technician to better assist the surgeon.



INDUSTRY/MARKET:

This device has an incredibly large market. The total US outpatient and ambulatory surgical market is estimated to exceed 144,000,000 surgeries in 2023. The SteriTransfer System can be used in the following medical facilities world wide: Emergency Room, Operating Room, Ambulatory Surgery Centers, Radiology Departments, Veterinary Clinics, Compound Pharmacies, Research Facilities, Preclinical Laboratories, and more.

The total estimated market based on the 144,000,000 surgeries expected in 2023, at a price point of \$60 per unit, equates to \$8,600,000,000.



Citations for The Problem Slide:

- 1 [NSIs per year](#)
- 2 [Percent of preventable NSIs](#)
- 3 [HAI costs to industry](#)
- 4 [Expenses due to HAI's](#)

Citations for The US Market Only Slide:

- 1 [Number of Operating Rooms In US - ASKWONDER](#)
- 2 [Ambulatory Surgery Data US - National Health Statistics Reports](#)
- 3 [Estimated Emergency Rooms in US](#)
- 4 [Surgeons in USA](#)
- 5 [Outpatient Surgical Procedures In US 2019-2023 - BusinessWire](#)
- 6 [Surgeons in CO](#)

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